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GRAPE AND SMALL-FRUIT VARIETIES FOR KENTUCKY

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BULLETIN NO. 396

Grape and Small-Fruit Varieties for Kentucky

By C. S. WALTMAN

Grapes and small fruits, including strawberries, raspberries, blackberries and dewberries, are especially suited to garden culture and can well be made a part of the fruit planting on most farms. There are many points in which they excel as fruits to grow for home use and there are several important areas of commercial production in Kentucky for each of these fruits.

Probably the most outstanding feature of the small fruits is the fact that they will bear maximum crops within two to four years after planting. In addition, they are well adapted to a wide range of soil and growing conditions and require a comparatively limited spray program because they are not seriously troubled by some of the insect and disease pests that are common on tree fruits. A further consideration which is of interest to all and particularly to commercial growers is that most of the small fruits are less likely to be seriously damaged by winter cold than the tree fruits. Some of them bloom late enough to escape spring frost in most years; others are low-growing and may be covered for winter protection; still others open their blossoms over a rather long period and usually form a fair to good crop of fruit even tho the first blossoms to open are killed.

The small fruits are considered luxuries by many people and are often thought of as delicacies which can be indulged in only on very special occasions. Under these erroneous opinions, the average family commonly fails to have these delicious fruits as a part of their regular menu and they enjoy them only on rare occasions because of their relatively high price. The numerous uses to which the small fruits are adapted and the great variety of colors, flavors and ripening seasons which they have, encourage more general planting, especially in the home fruit garden.

From the standpoint of commercial production, there are certain areas in the state where the various small fruits have been especially profitable and these sections have gained an enviable reputation for the high quality of their product. Areas in Kentucky adjacent to Cincinnati and Louisville have been outstanding as places where grapes grow excellently. The districts of Paducah, Bowling Green, and Louisville lead in strawberry production and Paducah and Danville are centers which are prominent for their raspberry and dewberry crops.

THE GRAPE

The grape is a popular crop the country over and there are many reasons why it holds a place of such high favor. It is very easy to propagate or the plants may be purchased for very reasonable prices. It thrives over a wide range of soil and growing conditions and the Concord variety is probably better known than any other single variety of any fruit. The grape is particularly suited to the home garden because it usually produces fair to good crops with a minimum of attention to culture and spraying. On the other hand, this crop responds excellently to good culture and careful attention and the additional care will practically always bring bountiful returns.

Ordinarily, grapes produce a fair crop in the third year after planting and after that will continue to bear abundantly for many years. They are relatively hardy and their late blossoming season tends to ensure a crop every season.

The grape is popular because of the large number of varieties which are available and among these are colors and flavors to suit the most exacting tastes. The purposes for which grapes may be used are numerous and they are especially favored for jelly, jams, grape juice and wine.

Fairly large quantities of this excellent fruit are shipped into Kentucky each season to meet the demand which is not adequately supplied by the home or locally grown product. Growers have found that grapes make an exceptionally good product for their roadside stands and many of them have found ready sale at good prices in local markets.

Interest in grape growing is increasing in many parts of the country and the introduction in recent years of several new and

promising kinds attests to the fact that this fruit is commanding widespread attention.

A large number of varieties are grown in Eastern United States and the majority of these are direct descendents of *Vitis labrusca* which is one of the American wild species. Also, many varieties are hybrids of two or more native species and the European grape, *Vitis vinifera,* has entered into the formation of quite a number of our present varieties. Pure Vinifera varieties are grown extensively on the Pacific coast and numerous attempts have been made to grow them in Eastern United States but most of these have been unsuccessful.

For convenience in listing the recommended varieties, they will be placed in groups according to color in the order of black or purple, red, and white.

Black Grapes

Concord. This variety is the most widely grown grape on this continent and is planted in every grape-growing state in the Union. It thrives on a variety of soils and under a wide range of climatic conditions. It yields bountiful crops in most sections and is undoubtedly the leading commercial variety of North America. Characteristics which make it outstanding are its prolificness, hardiness, attractive fruit, late blooming and comparative freedom from insects and diseases. For the manufacture of grape juice, Concord is used almost exclusively.

The variety was originated by E. W. Bull of Concord, Massachusetts, who planted the seed of a wild grape in 1843. The first fruits were borne by the new vine in 1849. The exact parentage of Concord is not known but it was thought that the wild grape which produced the seed may have been pollinated by a Catawba which was growing nearby.

From the time of its introduction the variety gained prominence very rapidly and in 1858 was placed on the recommended list of the American Pomological Society. Its growth in popularity is clearly shown by the fact that in 1865 it won an outstanding award as being the best grape for general cultivation.

The vines of Concord are very vigorous and unusually healthy and the blossoms open relatively late. The individual canes are fairly large and a good vine will form an exceptionally

large amount of new growth. The flowers are self-fertile and therefore do not require another variety to serve as a pollinizer.

The fruit of Concord is classed as only moderately high in quality but the majority of people think of it as a variety which meets their needs and tastes for most purposes. The clusters are medium to large and are generally uniform in shape. The berries are compact, rather large, glossy black, and are covered with a heavy blue bloom. The skin is moderately thick and tough, somewhat astringent and contains wine-colored pigment. The berries sometimes crack rather badly. The flesh is juicy, pale green, rather solid, slightly foxy, and moderately sweet. The quality is good and for general use as a fresh fruit and for cooking, the variety is outstanding. It is recommended for the home garden or commercial planting.

Moore Early. This is the standard early-season black grape and ripens ten days to two weeks earlier than Concord.

Credit for the origin of this variety is given to Captain John B. Moore of Concord, Massachusetts, who obtained it by planting a seed of Concord. The fruit was first exhibited in 1871 and was given recognition by the American Pomological Society in 1881.

Unlike its parent, the vines are not vigorous nor do they bear as heavily and regularly. It also appears to be more demanding in its soil requirements than Concord. To grow best, it requires a rich soil that is fairly loose and well drained and cultivation seems to be especially necessary. Cane growths are medium in length and size and not numerous. The blossoming time is midseason and the variety is self-fertile.

The fruit clusters are intermediate in size and rather loose. The individual fruits are large, almost black, and covered with a heavy blue bloom. The skin is rather thick but tender and somewhat adherent to the pulp. It shows quite a tendency to crack under unfavorable conditions. The flesh is juicy, fine grained and tough, with a slightly foxy flavor. The quality is good. The variety is suggested as a fairly suitable one for home planting because of its earliness.

Worden. This variety originated from a seed of Concord planted 1863 by Schuyler Worden of Oswego County, New York. At first it seems to have been confused with Concord and did not

gain prominence for some time after its introduction. Professor Hedrick of New York states that "Worden possesses most of the good qualities of Concord and lacks some of its bad ones." It is similar to Concord in many respects but differs from it in having better quality, larger berries and ripening approximately a week earlier. It fails to equal its parent, however, in keeping quality and does not ship as well. The fruits also crack rather badly and do not appear to overcome this trouble to the same degree that Concord does. For these reasons it has never gained the place of prominence that Concord holds.

The vines are vigorous and healthy and usually yield as heavily as Concord. The blossoming season is slightly earlier than its parent and the variety is self-fertile.

The fruit clusters are large and broad-tapering and quite compact. The berries are large, dark purplish-black, glossy, and heavily covered with blue bloom. The skin is moderately thick, rather tender and cracks rather badly. The flesh is very juicy, translucent, fine grained, somewhat foxy, quite sweet, and the quality is very good. The variety is not recommended as a commercial sort because of its tendency to crack.

Fredonia. This is a comparatively new variety that originated at the New York Experiment Station from a cross between the varieties Champion and Lucile. It ripens in early season with Moore Early or slightly earlier. The vines are vigorous, hardy, and productive and it shows promise of becoming one of the leading early season varieties for commercial growers.

The clusters are medium size, compact and cylindrical. The berries are large and do not shatter easily. The skin is thick, tough, blue-black and heavily covered with bloom. The flesh is light green, juicy, solid but tender and the quality is fair to good.

Sheridan. This also is a new variety developed by the New York Experiment Station, a cross between Herbert and Worden. In numerous tests it has shown much promise as a variety to extend the season of Concord and it possesses unusual keeping qualities. Because of its late ripening, it appears to be suited to localities where the growing season is long. In most sections the variety has shown unusual vigor and is hardy and somewhat more productive than Concord.

The clusters average larger and are more compact than Con-

cord and the berries are larger and firmer than that variety. The berries are blue-black, covered with a moderately heavy bloom. The flesh is sweet, firm, tender, rich and of high quality. The berries do not shell from the clusters as badly as Concord and the ripening time is approximately a week later. The variety is suggested for home planting or for a small trial planting for commercial sale.

Other Black Grapes. There are many other black or purple grapes that are of high quality and would be suitable for those who desire to grow a number of varieties for exhibition or to supply a succession of kinds for local markets. A few of these are here suggested. Those of recent origin are marked with an asterisk: Herbert, Erie,* Wilder, Van Buren,* and Athens.*

Red Grapes

Brighton. This variety is one of the comparatively few Labrusca-Vinifera hybrids that has gained prominence in commercial production. The parents of Brighton were Diana Hamburg, a hybrid of Vinifera crossed with Labrusca, and Concord, a purebred Labrusca. The original vine of Brighton was grown by Jacob Moore, at Brighton, New York, and fruited for the first time in 1870. The vines are vigorous and hardy and produce average size crops. Cane growth is usually quite satisfactory, the canes being rather numerous, medium to fairly large, and long. The flowers open rather late and are seldom injured by late spring frosts. The blossoms, however, are self-sterile and must be pollinated by some other variety.

The fruit ripens a little earlier than Concord and is extremely attractive with an unusual and pleasing flavor. The clusters are medium to large and show a tendency to ripen somewhat unevenly. After reaching complete maturity, they deteriorate rapidly. They also shatter quite badly after ripening. The berries are fairly compact and of medium size. The berries are light to dark red, covered with a somewhat dark, lilac bloom. The skin is rather thick but tender and somewhat astringent. The flesh is light green, very juicy, aromatic, vinous, and the quality excellent. As a variety for home use and local markets, Brighton holds high rank.

Agawam. This variety is one of the best known Roger's

hybrids and contains blood of the European species. The name is of Indian origin and is taken from a town in Hampden County, Massachusetts. The variety is especially notable because of its keeping quality. It ripens somewhat later than Concord. The vines are very hardy and vigorous but do not usually bear consistently heavy crops. It is also subject to mildew. The flowers open comparatively late and most of them are self-fertile.

The clusters are medium to large, short, rather broad, and not very compact. The berries are fairly large, light to dark dull purplish-red and covered with a lilac bloom. The fruits have an attractive appearance, altho they usually color less uniformly than Catawba. The fruits are rich, sweet, aromatic, and very good in quality.

Catawba. This variety is one of the most outstanding of American sorts. Hedrick states that "it was our first great American grape" and that "the records of a century have not divulged the secret of its origin." It has a very wide range of adaptation and has been among the leading varieties in the commercial regions of Eastern United States. It is noted for its excellent keeping qualities and has been kept satisfactorily in storage until March. It ripens late and, for that reason, is not suited to areas where the growing season is short. It has grown very satisfactorily in tests at the Experiment Station at Lexington.

The variety was introduced by John Adlum, of the District of Columbia, in 1823, who raised vines from cuttings which he obtained from a Mrs. Schall, of Clarksburg, Maryland, in 1819. Historical accounts state that the original vine probably grew in North Carolina, near Asheville.

The vines of Catawba are moderately vigorous and hardy but quite susceptible to mildew. The flowers are self-fertile, open quite late, and usually escape spring frosts.

The fruit clusters are medium to large and rather long. They vary in compactness but usually are quite compact. The color is dull purplish-red and some of the fruits occasionally develop poor color, remaining almost green or with only a blush of red. The skin is rather thick, somewhat tough, contains no pigment and is fairly astringent. The flesh is juicy, sweet, fine grained, slightly foxy and very good in quality. Because of its

excellent keeping qualities this variety is especially recommended for the home planting.

Delaware. This is one of the highest quality grapes that is grown and is considered generally as the standard of quality by which other varieties may be compared. It ranks second only to Concord in general popularity. It thrives under a wide range of soil and climatic conditions and possesses a degree of hardiness that is equaled by few other varieties. In spite of these merits, it possesses some defects which are quite unfortunate. The vines never attain large size and are slow growing. For these reasons they should be set more closely than other kinds. Also, the berries are small and the foliage is susceptible to mildew.

Delaware was first mentioned in 1849 by Abram Thompson, editor of the Delaware Gazette of Delaware, Ohio. The original vine was located in Hunterdon, New Jersey, but its exact origin was never determined. It was considered by some as having come from Italy, and for this reason was frequently spoken of as the Italian wine grape.

The vines are not vigorous and the individual canes are quite slender. The leaves, tho fairly numerous, are rather small and subject to injury by mildew and leaf hoppers. The blossoming time is comparatively late and the flowers are self-fertile.

The fruit clusters are compact, rather small, commonly shouldered and the ripening time is slightly earlier than Concord. The berries are small but uniform in size and shape and the color is light red with a light covering of lilac bloom. The skin is thin but the fruit handles quite satisfactorily. The flesh is greenish, tender, very juicy, aromatic and sweet. The quality is exceptionally high and the variety is especially recommended for the home garden. The additional price paid for this exceptionally high quality fruit has made it a satisfactory variety for growers who cater to a discriminating trade.

Caco. Among varieties of comparatively recent introduction, Caco has attracted considerable attention because of its good quality. It was introduced in 1911 by the Lovett Nursery of New Jersey and had been purchased from an old "hybridizer". The variety is said to have been developed by crossing Catawba and Concord and the new varietal name was coined by combining the first two letters from these varieties.

The vines grow vigorously and are hardy but have been found variable in productiveness. Under favorable soil conditions vine growth is usually heavy and the individual canes are numerous, large and long. The foliage is large and usually healthy altho quite susceptible to the attack of leaf hoppers.

The fruit clusters are of medium size, fairly compact and the berries are large. The color is wine-red altho quite frequently it does not develop uniformly. The skin is fairly thick and smooth and does not crack easily. The flesh is light green, tender, very juicy, and pleasantly flavored. The sugar content of the fruit is unusually high and the acidity comparatively low. The sugar develops rapidly during ripening and the fruits are edible even before they reach the fully ripened condition. Caco is very satisfactory for the home planting because of its high quality. It ripens slightly in advance of Concord.

Lucile. This is a typical red Labrusca in all of its characters and is meritorious in its vigor, hardiness, and productiveness. The variety originated in Chautauqua County, New York, and was produced by J. A. Putnam, of Fredonia. It fruited for the first time in 1890 and was introduced in 1899. It is considered to be a seedling of Wyoming. The vines make exceptionally good growth and ripen their wood satisfactorily even in regions with comparatively short growing seasons. Its productiveness is equal to Concord.

The fruit clusters are above average in size and usually single shouldered and compact. The berries are medium to dark red and covered with a rather thin lilac bloom. The skin is quite thin and tender and cracks badly under adverse conditions. The flesh is juicy, decidedly foxy, rather tough, moderately sweet and the quality is average tho not equal to Concord. The ripening time is approximately a week earlier than Concord or under average conditions, about with Worden.

Other Red Grapes. Lindley, Lutie, Keuka*, Urbana*, and Hector.* The asterisk means that the variety was introduced recently.

White Grapes

Niagara. This variety is the leading green grape in America and is used principally as a fresh dessert fruit. It is grown in practically the same regions where Concord thrives

and therefore has a very wide distribution. Its growth is vigorous and the vines are productive but they are less able to withstand winter cold than Concord and the fruit is very susceptible to black rot.

The originators of this variety were C. L. Hoag and B. W. Clark of Lockport, Niagara County, New York, and it was developed from seed of Concord fertilized by Cassady. It fruited for the first time in 1872 and was introduced by the Niagara Grape Company in 1882. It grows best in the north and in regions this far south is limited principally because of its susceptibility to black rot fungus. The vines are quite vigorous and usually very productive. Both roots and canes are more susceptible to injury from cold than Concord and in the test plantings at the Experiment Station, considerable wood injury to Niagara has occurred in occasional years. The flowers open in midseason and are self-fertile.

Fruit clusters are medium to large, rather broad and tapering and fairly compact. The berries are of average size, light green changing to yellowish green at full maturity. There is a thin covering of light gray bloom that is quite persistent. The skin is thin, rather tender and contains no pigment. The flesh is light green, tender, very juicy, mild, foxy and pleasantly flavored. The quality is good and especially desired by many.

For the home planting or commercial sale, Niagara is recommended as a very desirable green grape.

Portland. As an early green variety, Portland appears to have considerable promise. It was developed by the New York Experiment Station and is a comparatively recent introduction. The vines are vigorous, hardy, and productive and the foliage is unusually healthy under most conditions.

Fruit clusters are large, fairly compact, and the berries are of good size. The skin is moderately thick, green changing to a somewhat unattractive appearance at full maturity and the berries are inclined to shatter rather badly. The variety is suggested for trial in home plantings.

Golden Muscat. This new variety was developed by the New York Experiment Station and is suggested because of its high quality and rich golden color. The vines are vigorous and productive and the clusters are large, single shouldered, and

compact. The berries are medium to large, very juicy, fine textured, aromatic and sweet. It ripens approximately a week or ten days later than Concord.

Other White Grapes. Diamond, Dutchess, and Ontario*.

Wine and Grape-Juice Varieties

A large amount of the unfermented grape juice that is now sold commercially is manufactured from the Concord variety. Production of this product is located for the most part in the Chautauqua grape belt in New York, Ohio and Pennsylvania, and also in Michigan. Several different varieties are used for wine making and the choice of a kind is determined largely by the type of wine to be made. In Eastern United States, the Catawba, Diamond, Delaware, Dutchess and Iona are used in champagne making. Other varieties that are commonly used for wine are Norton, Ives, Concord, Diana and Clinton.

THE STRAWBERRY

The strawberry is a very suitable crop for the garden and a comparatively small planting will produce a quantity sufficient to provide the family with ample fresh fruit in season and a supply for canning and preserving. As a commercial crop in certain sections of Kentucky, the strawberry has been found very satisfactory and the quality of the product that is shipped from these districts each year has earned for them an enviable reputation.

There are nearly five thousand named strawberry varieties and among these are some which are very cosmopolitan and thrive over a wide range of conditions. According to the opinion of outstanding investigators who have made detailed studies of the response of a particular variety in different sections, the length of daily illumination plays a very important part in determining the ability of the plants to reproduce. Soils also have a decided influence in the same way.

Numerous attempts have been made to grow the Aroma at the Experiment Station at Lexington and in other parts of the bluegrass region. In general, they have responded poorly, both in fruiting and plant forming. The fact remains, however, that this variety is outstanding in the commercial districts of western Kentucky. With these points in mind, it would be best for one

who contemplates planting an area of strawberries to select those kinds that are definitely known to respond well in the section where the planting is to be made or, if some of the more recent introductions are to be tried, to make only a small planting in order to determine what their reaction will be.

Considerable work has been done in recent years in breeding varieties with the expectation that in this way new kinds will be developed that will be particularly suited to the areas where they have been formed. The time required to produce a new variety of strawberry is much less than is necessary for a tree fruit and, as a consequence, many new kinds have been offered in recent years. Some of these are proving to be outstanding in yield, plant forming, disease resisting, or in some other characteristic. The Catskill is a new kind which is commanding much attention because of its productiveness.

A further consideration which must be given to the choice of varieties is whether the flowers will set fruit without the aid of some other variety to serve as a pollinizer. Those which fail to form pollen satisfactorily are called "pistillate" or imperfect sorts and must be planted with some other kind that will furnish pollen. Those which form pollen abundantly are known as "staminate" or perfect varieties. In the majority of cases it is best to plant only those varieties which have perfect flowers and the ones which are here suggested are of that kind.

Aroma. Among varieties of commercial importance in eastern United States, Aroma ranks second and is grown from the Atlantic almost to the Rockies. It originated as a seedling of Cumberland, in 1889, with E. W. Cruse of Leavenworth, Kansas. It was introduced in 1892. It is moderately vigorous and ranks medium to fairly good as a plant producer. It grows to an average height, and is healthy and very productive. The flowers open in late midseason. The berries are large, uniform, light red with a light green calyx. They are quite chunky and have a blunt wedge-shaped form. The flesh is very firm, well colored thru the fruit, juicy, pleasant flavored and sprightly. The fruit ripens from mid to late season and the ripening period is relatively long. An additional outstanding feature is that the variety is an exceptionally good shipper.

Blakemore. This variety has gained prominence rapidly

since the date of its origin in 1923. It originated at the United States Field Station, Glenn Dale, Maryland, from a cross of Missionary and Premier. Its most outstanding characteristic is its exceptionally vigorous growth and habit of forming a large number of new plants. Very few, if any, varieties equal it in this respect. Under good growing conditions it forms too many plants and should be thinned for best results. Another consideration which can be given, is that the plants can be spaced considerably farther apart when planted than other commonly grown kinds. For a large acreage, this is of some consequence in the cost of plants.

One difficulty which has been experienced in the older plantings of this variety is the presence of a disease known as "yellows" which affects the foliage and considerably reduces the efficiency of the plants. Recently, selections of plants have been made in various sections which are apparently highly resistant to this trouble and these may now be purchased from leading nurserymen.

The fruits of Blakemore are light red and colored uniformly to the center. They are firm, medium size, stand shipment exceptionally well and are proving to be a good preserving and canning berry. Under conditions of plentiful moisture supply, they maintain good size thru most of the picking season but in dry years, the berries are likely to be small during the latter part of the harvest. In tests at the Experiment Station they have ripened two or three days earlier than Premier.

Premier. Howard 17, as this variety is also known, gained prominence rapidly since its introduction and is now the third leading variety in the United States. It is commonly grown in most of the leading commercial strawberry areas of the northern half of the country and succeeds well under variable soil and climatic conditions. It originated as a seedling with A. B. Howard and Son of Belchertown, Massachusetts, and was introduced in 1909.

The variety has the unfortunate habit of forming only a fair number of new plants and for this reason, if the plants are spaced too far in setting, may fail in places to form a good matted row. What it lacks in plant-forming ability, it makes up in fruit bearing and under most conditions bears heavy crops

that maintain good size of berries until late into the harvesting season.

The berries are an attractive medium red, are uniform, and firm enough so that they stand shipment fairly well. The fruit ripens in early season and is good in quality. For the garden or commercial planting, Premier is usually satisfactory.

Catskill. Among several varieties tested at the Experiment Station, Catskill was by far the most productive. In 1938 it yielded at the rate of over four hundred crates to the acre. The variety is of recent introduction and was developed by the New York Experiment Station as a cross between Marshall and Premier. It seems to be especially adapted to northern sections of the country but has given remarkable results at several places in Kentucky and in some sections of Tennessee.

The plants grow vigorously and are large and erect. It appears to be a good plant maker and shows the ability to thrive under adverse weather conditions. Thus, in the summer of 1937, it bore a fair to good crop under extremely dry conditions, and considerably outyielded all other kinds in the same planting.

The fruits are very large, roundish wedge shaped, somewhat irregular and uneven, moderately firm, medium to rather dark red and quite glossy. The flavor is mild subacid and the quality is not high but good. The ripening time is four to five days later than Premier. As a variety for the home garden or for test as a commercial sort, this one is well worthy of trial.

Dorsett. In 1923, the U. S. Department of Agriculture made a cross of Premier and Royal Sovereign and from it developed this variety which has now been rather widely tested and is proving to be a berry of high quality, ripening in early season. In tests at the Experiment Station the variety has shown only average yielding ability and is only a fairly good plant producer. The quality of the fruit produced, however, is very good and the variety appears to be particularly suited to garden culture or for local markets where a berry of high quality is especially desired. The ripening time is practically the same as Premier.

The berries are light red, attractive and firmer than Premier. The shape is round-conic and the size is average to moderately large. The variety is well worthy of trial.

Fairfax. The United States Department of Agriculture developed this variety, also, from a cross of Premier and Royal Sovereign, and it is somewhat similar to Dorsett. It ranks as a berry of high quality ripening a few days later than Dorsett and Premier. In tests at the Experiment Station it has shown greater vigor than either Premier or Dorsett and has also proved to be a somewhat better plant producer. Its growth habit differs from these two in that the fruit stems are relatively heavy and are held in a more upright position. The foliage seems quite resistant to leaf diseases.

The berries are medium to large and when fully ripe are a dull dark red. One objection which we have noted particularly with Fairfax is that the seeds are prominent and conspicuous, giving the fruit the appearance of being quite seedy. The berries are of high quality and the plants are quite prolific. The variety is recommended for trial.

Culver. This new variety originated at the New York Experiment Station and promises to become one of the outstanding mid to late season varieties. In recent tests it has shown unusual yielding ability. The plants grow vigorously, form new plants abundantly and the foliage appears quite resistant to leaf diseases.

The fruit is large, moderately dark red, very attractive and quite firm. The quality is very good and the variety promises well and is worthy of trial.

Gandy. This is the standard late strawberry and has been grown for many years. The variety originated in 1885 with W. S. Gandy, of Newport, New Jersey, as a cross between Glendale and Jersey Queen. It was introduced in 1888.

The plants are vigorous and rather spreading in growth, and produce many new ones. The leaves are thick, quite heavy and dull green. The plants are partial as to soil and grow best in relatively heavy soil. The blossoming season is comparatively late.

The fruits are large, late maturing, round-conic, light to rather dark dull red and the seeds quite prominent. The fruits are decidedly acid and for this reason are not wholly satisfactory for canning. When the fruit is crushed, the color is rather poor because the red color does not extend completely thru the flesh.

Another characteristic is that the berries have hollow centers and quite frequently the calyx is pulled off in picking, carrying the central core with it. The plants do not yield very heavily and the variety is of merit principally for the purpose of extending the regular season. It is subject to severe leaf spot.

Everbearing Varieties

The so-called everbearing varieties are not grown to any extent in the state and several attempts with them have been quite unsatisfactory. They are somewhat of a novelty and are of value only for those who are interested in a type of berry which will produce fruit during late summer and fall. These kinds produce some fruit at the usual time in the season and also again in late summer. The quantity produced at any one time is small and for this reason principally, the everbearing sorts have not been commercially profitable. The most satisfactory results may be expected under growing conditions that are extremely favorable and their response is usually much better if irrigation can be given.

Mastodon. This variety has proved to be one of the most satisfactory of the everbearing types. It originated with George Voer, of Peru, Indiana, from a cross of Superb and Kellogg Prize. The plants are vigorous but like all varieties of this type do not form many new plants. They should be set more closely than standard varieties and they give best results on low, rich soils. The foliage is quite susceptible to diseases. The fruits are large, uniform and attractively colored. The yields are not heavy but they are of good quality.

Other Everbearing Varieties. Champion, Gem, Wayzata. The two last named varieties are of recent origin and are worthy of trial if an everbearing variety is desired.

CANE AND BUSH FRUITS

This group of fruits includes the "brambles" or cane fruits which consist of the black, red, and purple-cane raspberries, blackberries, dewberries, and other closely related forms. They are characterized by having biennial canes and perennial roots and the fruit each season is borne on new shoots that are formed from lateral mixed buds on canes of the previous season's growth.

The buds of these fruits open relatively late and are seldom injured by late spring frosts.

The currant and gooseberry are classified under bush fruits and altho comparatively few are grown in Kentucky, nevertheless, they grow fairly well and are quite acceptable for garden culture.

THE BRAMBLES

The red raspberry is the most important cane fruit grown in Kentucky, and the black raspberry ranks second. These plantings generally have been profitable altho leaf spot and anthracnose are frequently limiting factors to their growth. A planting of raspberries will yield a fair return in the second season after the plants are set, with practically a full crop in the third year. Spraying is necessary to control the troubles mentioned above but the material used is inexpensive and the number of applications necessary each season relatively few. The life of a plantation varies considerably, ranging from five to ten years. The sections in which they are grown and the prevalence of diseases are usually the deciding factors on this point. Many cases are known where bramble plantings have given excellent results over a longer period than has been suggested.

The availability of markets for the product is of primary importance in the consideration of the planting of a considerable area of bush fruits for commercial sale. All these fruits are highly perishable and red raspberries particularly so. Harvesting must be done promptly and the fruits then marketed at once or processed so that they will not be lost. They will keep for a short time under good storage conditions and the quick freezing process is now being utilized quite extensively in the larger commercial centers.

Black raspberries generally start ripening a few days before the reds but the length of time over which harvesting extends is usually longer for the reds. Under average temperature conditions the blacks may usually be picked every other day but to have the red varieties in the best possible condition when harvested, picking is generally necessary every day.

The list of named varieties of brambles is quite extensive but only a comparatively small number of these are of importance for home or commercial planting. Many new varieties have been

introduced in recent years and some of these are very promising. There appears to be considerable opportunity in the development and testing of new varieties to find kinds which will respond best in those sections where bramble culture is an important enterprise.

The Red Raspberry (Rubus strigosus)

Latham. This variety is grown thruout the state and its outstanding characteristics are the vigor and hardiness of the plants and the size of the berries. The variety was developed by the Minnesota Fruit Breeding Farm as their number 4 and was introduced in 1912 under that number. It resulted from a cross of King and Loudon and was later named Latham in honor of A. W. Latham who for many years was Secretary of the Minnesota Horticultural Society. The variety is now widely disseminated and is grown successfully wherever raspberries succeed.

The plants grow vigorously under most conditions and are prolific plant producers. In general, they show a high degree of hardiness and are quite resistant to most diseases. Occasionally they are seriously injured by leaf spot and some plantings have shown quite noticeable infections of mosaic. The variety is highly productive and has proved to be one of the best for commercial growers.

The fruits are large, light red, glossy and hemispherical. The individual drupelets have a rather weak coherence which causes the berries to crumble quite easily. Under some conditions, there appears to be a tendency for the variety to form double berries. The fruit is very firm, moderately juicy, mildly subacid, and somewhat variable in flavor. In general, the quality is not high, but the high productivity of the plants and the attractiveness of the fruits have made this the leading commercial variety in the state.

Chief. This variety was developed by the Minnesota State Fruit Breeding Farm as a self-pollinated seedling of Latham. It resembles its parent in many respects but the fruit ripens about a week earlier. Results at the Experiment Station with this variety were not as satisfactory as with Latham and the variety has not performed as well here as in some other sections of the state. The plants did not grow vigorously and were very

susceptible to diseases. The fruit was small and the harvesting season comparatively short. In general, the variety is noted for its hardiness, and tests in other sections of the country have shown it to be a very productive variety and the fruit to be of higher quality than Latham.

The berries are a deep, attractive red and hold their color well when canned. The variety is not suggested for general planting but is worthy of trial.

Cuthbert. For many years this was the leading midseason variety thruout the country, and still holds a place of considerable importance as a commercial variety in some sections. It is noted for its high quality and has proved to be a most excellent canning and preserving variety. It is not as productive or as disease resisting as Latham but is most desirable for the home garden because of the high quality of the fruit. Cuthbert was found as a chance seedling by Thomas Cuthbert about 1865 in a section of New York which is now a part of New York City.

The plants grow vigorously and are tall with an upright-spreading growth habit. They are relatively hardy to winter cold but easily attacked by mosaic. The plants sucker rather freely but do not yield heavily. They blossom in midseason.

The fruit ripens rather late, is medium to large, conical, dull dark red with a heavy blue-gray bloom, and the berries are uniform. The flesh is quite soft, juicy, sweet and richly aromatic.

Flaming Giant (Ohta). This variety is of comparatively recent origin, developed by the South Dakota Experiment Station from a cross between a wild red raspberry and Minnetonka. The results with it over Kentucky have been various. At the Experiment Station it is the most vigorous variety under test and forms a large number of new plants. The ripening time is early being a week to ten days ahead of Latham. It is comparatively free of diseases but the fruits are only medium size and quite soft. The quality is average and the berries are light red.

Newburgh. This variety, introduced in 1929, originated at the New York Experiment Station from a cross of Newman and Herbert. It has shown considerable promise in comparative trials and is worthy of consideration for home or commercial planting. The canes are rather low and spreading, droop con-

siderably and have shown a greater tendency to branch than other varieties under test. The growth is moderately vigorous and a fairly large number of new plants are formed. The variety is moderately hardy and apparently very resistant to mosaic.

The fruit is a deep, rich, red, very attractive and crumbles less than Latham. The berries are large, firm, well formed, and ripen a few days earlier than Latham. The quality is good and yields in 1938 were considerably heavier than from any of the other new varieties under test.

Marcy. This promising new red variety was offered for the first time in 1936 by the New York Experiment Station and in two years' trial at Lexington, has shown considerable promise. In yield it ranked second among the test varieties, being exceeded only by Newburgh.

The canes grow tall and are vigorous, sturdy and productive. The fruit is carried well in the open which facilitates picking and the plants do not require support.

An outstanding characteristic is the large size of the berries. They are an attractive deep red, firm, long-conic, and thick fleshed. The flavor is mild and the quality is good.

Taylor. This is another new variety originated at the New York Experiment Station. The plants grow tall, are vigorous and form a good many suckers. The variety has not yielded as well as Marcy or Newburgh during two years' trial at the Experiment Station but the characteristics of growth and the nature of the fruit are noteworthy enough to warrant trial for limited plantings.

The berries are large, bright attractive red, long-conic, firm, thick fleshed, subacid and the quality very good. The ripening time is shortly before Latham.

Everbearing Red Varieties

Ranere (St. Regis). The origin of this variety was with a Mr. Ranere of New Jersey but in 1912 the Lovett Nursery Company of that state introduced it under the name, "St. Regis." It has since been sold by different nurserymen under both names but the name St. Regis is now rarely used. It is listed as an everbearing variety but most of the crop is borne in

early summer with a light crop in the fall, at the tips of one-year canes.

The plants are fairly vigorous, attain a medium height and are hardy under most conditions. They form a fairly large number of suckers but are quite susceptible to crown gall.

The fruits average small and are not uniformly colored. The color and quality are mediocre and the variety is of interest only to those who desire to have plants which produce some fruit out of the regular season.

Indian Summer. The New York Experiment Station developed this variety and it was introuced only a few years ago. In comparative tests it appears to be the most promising of the so-called everbearing or fall-crop varieties. The plants make good growth and form a fair number of new suckers. So far, it has proved to be hardy and a considerably heavier producer than Ranere.

The berries are large, medium to dark red, roundish-conic, somewhat irregular and rather soft and crumbly. The quality is good and very attractive for a variety ripening in late fall. The early-season portion of the crop ripens about with Flaming Giant and the autumn crop starts ripening in September and continues until hard frost.

The variety is not recommended for commercial planting but is worthy of trial for the home garden.

Yellow or Golden Raspberry

Golden Queen. Occasional requests are made for the name of a variety which produces yellow or golden colored fruits. Golden Queen is the only one of any importance. The variety is not important commercially and is of value only for those who desire an unusual type of berry for garden culture. It is thought to be a sport of Cuthbert and varies from it principally in fruit color. It originated in a planting of Cuthbert near Berlin, New Jersey, in 1882.

The plants are moderately vigorous but the foliage is especially tender and easily injured by wind. Also, the canes are very susceptible to the mosaic disease which usually proves fatal.

The fruits are of good size, delicately flavored, and of high

quality. The unusual color and distinctive flavor make this variety desirable for those who delight in having an interesting collection of fruits in their gardens.

The Black Raspberry (Rubus occidentalis)

Quillen. Among varieties of comparatively recent origin, Quillen is outstanding, particularly because of its resistance to anthracnose. In comparative tests at the Experiment Station this variety has grown and yielded well and has shown less anthracnose infection than any other kind. Quillen originated from a cross of Cumberland and Hopkins, about 1913, by C. M. Hobbs and Sons of Bridgeport, Indiana.

The plants are medium size, rather vigorous and spreading, moderately hardy and produce good crops. The fruits are large, uniform, glossy black, subacid, roundish oblate and good in quality. In comparative tests they have ripened approximately with Cumberland.

Cumberland. This has been the standard midseason variety for a long time and possesses many points of merit together with some unfortunate shortcomings. When well grown, it is one of the best black raspberries, being productive, hardy, and yielding fruit of large size and good quality. The plants are highly susceptible to disease, and anthracnose, if not controlled, becomes a serious menace to this variety. It originated with David Miller, Camp Hill, Pennsylvania, and was introduced in 1896 after having been grown locally for a few years. The parentage is not definitely known altho it is said to be a seedling of Gregg.

The plants are upright-spreading, rather tall, quite vigorous and hardy but contract disease easily and quickly. It produces a fair number of new plants per hill and blossoms relatively early.

The fruits are large, uniform, attractive and, under conditions of plentiful moisture, hold their size well thru the harvesting season. The berries are conical, have large drupelets that do not crumble and the variety has proved to be excellent for shipping. The flesh is firm, juicy, rich and sweet and the quality is very good. The fruits are desirable for any purpose and the variety is suitable for home or commercial planting if adequate attention can be given to the control of diseases.

New Logan. This early-ripening variety is of comparatively recent origin and is outstanding because of its ability to resist disease and to grow and ripen its fruit satisfactorily under relatively low moisture conditions. It originated in Illinois and is the leading commercial variety in the Clyde district of Ohio where it was introduced about 1915.

In tests in the Experiment Station plantings, it has yielded fully as well as Cumberland and has made a more vigorous growth. The fruits ripen a few days before Cumberland, are medium size, attractive black, well-formed, and the quality is good. For home planting or commercial production, this variety is desirable because of its resistance to disease.

Dundee. This is a promising new variety developed by the New York Experiment Station. In our tests of 1938, the yield was not exceptionally heavy but cane vigor and fruit characters were noteworthy enough to warrant continued trials.

The berries are large, glossy black, moderately firm and very attractive. The quality was exceptionally high and somewhat less acid than some commonly grown kinds.

The Purple-Cane Raspberry (Rubus neglectus)

Varieties of this type are developed as hybrids between black and red kinds. They frequently possess exceptional vigor and the fruits are purple and flavored more nearly like blacks than reds. They are very satisfactory for either canning or preserving. The character of cane growth in most cases more nearly approximates that of black varieties and they are propagated in the same way, by tip-layering.

Columbian. This variety was developed in 1888 by J. T. Thompson of Oneida, New York, and is a seedling of Cuthbert which was thought to have been pollinated by Gregg, a black variety growing nearby. It was introduced in 1891. It possesses many desirable characteristics such as high quality, fairly firm flesh, hardiness, healthiness, and high productivity and ranks as the most widely grown of purple varieties.

The canes are vigorous, tall, upright-spreading and hardy. They are subject to infection by mosaic and contract the disease very slowly but when once affected are likely to be seriously

injured. The blossoms open late and usually escape spring frosts.

The fruit is medium size, attractive, dull purple, moderately firm, juicy, aromatic and very good in quality. The berries ripen late and when canned or preserved, produce an excellent quality product.

Cardinal. In many respects, this variety is similar to Columbian but possesses the ability to thrive over a wider range of climatic conditions and consequently has been grown successfully both farther north and farther south than Columbian. Hedrick of the New York Station states that "perhaps no other raspberry can be grown as far south." It had its origin with A. H. Griesa of Lawrence, Kansas, in 1888, and is a seedling of Shaffer.

The canes are productive, hardy and vigorous and in tests at the Experiment Station the variety has proved better than Columbian. It propagates by tips and the blossoms open about as late as Columbian.

The fruits are medium to large, rather broad, dark dull purple, firm, quite sweet and juicy. The flavor is quite similar to that of the red raspberry. The berries ripen quite late and are very good in quality.

Sodus. Among all varieties of raspberries grown in trial plantings at the Experiment Station, Sodus was the most outstanding. The plants have shown greater vigor and fruitfulness and the berries were larger than any other kind. The variety was developed by the New York Experiment Station by crossing the Dundee black raspberry and the Newburgh red. It is of recent origin and promises to replace Columbian because of its greater freedom from disease.

The canes are very vigorous and grow two to three feet taller than any of the black varieties. In two years of bearing they have yielded very heavily and the plants are hardy and stand dry weather exceptionally well.

The berries are very large, firm, medium purple, sprightly subacid, and good in quality. In our comparative trials it has ripened approximately at the same time as Latham and a few days later than Quillen and Cumberland.

The variety has performed in such an exceptional way that

we highly recommend it for planting. It makes an excellent fruit for home use and should find ready sale on any raspberry market.

The Blackberry

The blackberry is one of the most recent fruits to be brought under cultivation and our commonly grown varieties are representatives of several different species. The cultivated varieties are almost wholly of American origin and wild forms of this fruit are to be found in practically all sections of the country. The wild forms represent several different species which cross and recross under their natural habitat and the same condition undoubtedly occurs in garden culture. For these reasons, no attempt is here made to list the species which they represent.

There is a fairly large number of cultivated varieties but only two or three are important for home or commercial planting. There are no important commercial districts in the state and the only place where a considerable acreage has been grown in past years is near LaGrange. Blackberries are comparatively easy to grow and are one of the finest fruits for home use.

Early Harvest. This is the leading early-season variety and tests in many parts of the country have shown it to be the heaviest yielding variety that ripens its fruits early. Under average conditions the fruits are ripe several days in advance of the wild forms, a distinct advantage for those who sell the berries. The variety is unfortunately very susceptible to orange rust and under southern conditions this disease frequently becomes a limiting factor to its succesful growth.

The exact parentage of Early Harvest is not known but the original plant was found growing wild in Illinois some time prior to 1880. The plants are medium to rather small, stocky and upright and require no trellis. Growth is only moderately vigorous and new canes are not formed in large numbers. The flowers open in midseason and are self-fertile.

The fruits are medium size, long-conic, glossy jet black, drupelets small and ripen very early. The flesh is fairly firm, juicy, tender, very mild and the quality fairly good.

Eldorado. The origin of this variety was near New Eldorado, Ohio, about 1880 and it occurred as a chance seedling. It now ranks as the leading midseason variety in many sections

where blackberries are grown. It is resistant to orange rust and when this disease appears in a planting of this variety, it is a pretty good indication that some other variety has been mixed with it.

The plants are vigorous, tall, upright-spreading, and are extremely hardy and productive. The flowers open quite early and are self-fertile.

The fruits are uniform, handsome in appearance, jet black, drupelets large, and they ripen in early mid-season. The flesh is juicy, firm but tender, sweet and rich. The quality is very good and the variety is desirable for the home garden or for commercial plantings.

Ward. This is a late-season variety and is acceptable in most of its characteristics. It is not as hardy as Eldorado and not infrequently suffers winter injury. It originated about 1900 with Thomas H. Ward of Manalapan, New Jersey, and is considered to be a seedling of Kittatinny.

The plants are moderately productive, tall, upright-spreading, and quite vigorous. The fruits are fairly large, somewhat irregular, glossy black, juicy and good in quality.

Brainerd. This new variety has attracted some attention in various parts of the country and has fruited at this station for the past four years. In spite of all the advantages which have been attributed to it, the results here have not been satisfactory, principally because the fruits have been low in quality and very difficult to harvest because of the prickles which are extremely long, numerous and sharp.

The plants are extremely vigorous and canes are large and heavy. The leaves are often peculiarly variegated and orange rust is likely to be a serious menace to the plants. Yields have been good.

The fruits are large, usually well-formed and quite attractive but the quality is not high even when well ripened.

The Dewberry

The fruit of the dewberry is very similar to the blackberry in shape and in flavor. The principal difference between these two fruits is that the dewberry has a trailing habit of growth and is propagated by tip-layering while the true blackberry

grows upright and is commonly propagated by suckers or root cuttings. In general, also, dewberries ripen earlier than blackberries.

Lucretia. This is the only variety grown to any extent and it thrives on nearly any soil. It was the first cultivated dewberry and ranks today as the leading kind in several commercial areas. Historical accounts state that the original plants were found growing wild in West Virginia. Some of these were sent to a Mr. Albaugh in Ohio who named the variety Lucretia in honor of Mrs. Lucretia Garfield.

The plants are vigorous, trailing, only moderately hardy, very productive, almost immune to orange rust, but quite susceptible to anthracnose.

The fruits are large, jet black, and very good if allowed to ripen properly on the vine. They make a delicious fruit for canning or preserving but the fresh fruit is somewhat too acid to suit the taste of the average person.

Hybrid Varieties

Youngberry. This comparatively new fruit is considered to be a cross between the loganberry and dewberry. In tests here at the Experiment Station, it has proved to be the most luscious fruit which we have ever grown and only its tenderness keeps it from being a sort which can be generally recommended.

The canes are quite vigorous and trailing and must be trained to a wire trellis for best results. The canes are susceptible to winter injury and are likely to be severely damaged by temperature as low as zero. In winter, the canes may be laid on the ground and covered with straw and under average conditions here, will be amply protected in that way.

The fruits are very large, reddish-black, very juicy, sweet and melting. The drupelets are large, soft, and deliciously flavored. It is a very desirable fruit for home use but too soft to stand handling.

Boysenberry. Tests in various parts of the country have shown phenomenal results with this new fruit. It is a hybrid which originated in California and is said to have been formed from a cross of blackberry, raspberry, and loganberry. It is

especially noteworthy because of its vigor and high yield of fruits of exceptional size and high quality.

The plants have a trailing habit of growth and are apparently more hardy than Youngberry. The berries are very large and long and have a formation similar to blackberry. They possess a rich, sweet flavor. They are worthy of trial for the home garden.

BUSH FRUITS

The Currant

Our commonly cultivated varieties of currants were derived for the most part from three species and the varieties that meet with greatest favor in this country are those in which the fruit is red. The bushes are rather low and form no central stem or axis. Some new growth is formed each year but each cane may continue to bear for several seasons. They differ in this respect from the brambles in which the canes are biennial and die after fruiting in the second year. Currants usually start to bear in the third year after the plants are set and usually reach maximum production in about five years. They are a very desirable fruit for garden culture and are valued highly for jam and jelly and for blending with other fruits because of their high pectin content. Unfortunately they bloom quite early in the spring and occasionally suffer damage from frost.

Perfection. This variety is quite satisfactory because of its vigor. It originated in 1887 with C. S. Hooker of Rochester, New York, as a cross between Fay and White Grape. The American Pomological Society placed it on its recommended list in 1909.

The fruit clusters are long and tapering and the berries uniformly large, medium to dark red, smooth and very attractive. The flesh is juicy, tender, sprightly subacid, and very good in quality. The ripening time is early midseason.

Red Cross. This is one of the older varieties and in several sections has been replaced by newer sorts which develop larger fruits. Also, it is less acid than most other varieties and consequently is less satisfactory for jelly. It was originated by Jacob Moore, Attica, New York, in 1885, as a cross between the varieties Cherry and White Grape.

The plants are large, upright-spreading and vigorous, form many new shoots and the blossoms open somewhat later than those of Perfection. The fruit clusters are relatively short, rather slender and often loosely filled. The berries are medium to large, bright light red, translucent, and ripen in midseason. The flesh is juicy and mild in flavor when fully ripened. The quality is good but the fruits are less desirable for jelly than some other varieties because their content of pectin and acid is lower.

Fay. The large size of both clusters and berries makes this one of the most desirable of the large-fruit sorts. The principal disadvantages inherent in the variety are that the plants are not very large and the yields are not very heavy. The variety is a seedling originated in 1868 by Lincoln Fay of Portland, New York. It is thought to be a cross of Victoria and Cherry.

The plants are quite spreading, rather dwarf and produce numerous young shoots which are quite susceptible to breaking. The blossoms open early before the leaves have made much growth and are quite frequently injured by frost.

The fruit and clusters are large, rather long, quite loose and dark glossy red. The flesh is juicy, firm, sprightly subacid and the quality very good.

Wilder. This is the principal variety in New York and is grown thru a large part of the eastern section where currants are produced for commercial sale. The variety is a seedling of Versailles and was originated by E. Y. Teas of Irvington, Indiana, about 1877.

The plants grow large, slightly spreading and are quite productive. They produce many new shoots and the blossoms open early.

The fruit clusters are long and rather loose. The berries are not large but are glossy dark red and very attractive. The skin is smooth, thin and translucent and the flesh is tender, firm, pleasantly subacid, and good in quality.

White Dutch. For those who desire a white-fruited currant, this variety is one of the best. It differs from most of the red varieties in that the berries are almost sweet. White Dutch has been used quite extensively in breeding work to produce many of the varieties of more recent origin. Its origin is not

known but authorities consider that it was probably brought to America from Europe early in the nineteenth century.

The plants are quite vigorous, upright, and attain fair size. Their blossoming season is relatively late and many shoots are formed each season.

The berries are rather small, yellowish-white, tender and translucent. The flesh is tender, fairly juicy, mildly subacid and the quality very high.

The Gooseberry

In growth and bearing habit the gooseberry is similar in many respects to the currant. In both, the fruit buds contain flower parts only and are formed laterally on long, vigorous shoots and also laterally on spurs which develop from the older wood. A distinguishing characteristic between the plants of these two fruits is that the shoots of the gooseberry are covered with spines or prickles. Gooseberries, like currants, blossom early and not infrequently are injured by spring frost.

The fruits of gooseberry are prized because of their acid and pectin content. They are used for pies, jelly, jam and for blending with other fruits.

Downing. This is probably the most widely grown gooseberry in America and has gained this rank because the plants are healthy, vigorous and productive and the fruits smooth, attractive and of good quality.

Botanists now consider Downing to be a hybrid with European species. It was originated by Charles Downing of Newburgh, New York, about 1855, as a seedling of Houghton.

The plants grow rather dense, upright-spreading and are unusually healthy and productive. The fruits are medium to small, dull silvery-green, juicy, tender and excellent in quality. The ripening time is in midseason.

Houghton. This variety, also, is a hybrid between an American gooseberry and a European sort. It originated from a seed planted by Abel Houghton of Lynn, Massachusetts, in 1832. The fruit is not so desirable as Downing because it is smaller, poorer in quality, and less attractive. However, the plants are vigorous, hardy, large and productive and the variety is widely

grown and thrives over a wide range of soil and climatic conditions. The flowers open rather late which also is an advantage.

The fruits are small, green at first but later changing to an attractive dark red, moderately juicy, pleasantly subacid and good in quality. They ripen in midseason.

Poorman. Among different gooseberry varieties that have been widely grown during the past several years, Poorman has probably attracted more attention than any other. It is especially noteworthy because of its vigor and productivity and the excellent quality of the fruit. The variety is thought to be a cross between Houghton and Downing and originated with William H. Craighead of Brigham City, Utah, about 1888.

The plants form numerous new shoots, are vigorous and healthy and grow rather dense and quite spreading. The blossoms open in midseason and the fruits are medium to above in size, green at first and later changing to an attractive pinkish-red. The flesh is tender, juicy, quite sweet when ripe and excellent in quality. They ripen in early midseason.

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